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ABSTRACT

A "national cry" has gone out that phonics and phonemics awareness must again be taught. True literacy involves much more than merely reading. Students need to be equipped to think, write, spell, and express themselves orally and on paper. This helps them to clarify their own thinking. The English alphabet is a sound/symbol system, not a pictographic one, and the 26 letters of the alphabet, singly and in some set combinations, are used to write the elementary sounds of English speech--the 42 pure sounds needed to say the entire English lexicon. The paper outlines and discusses the Riggs Institute's way of teaching their students to listen, hear, and say the sounds accurately, to read and write the corresponding letters, and to pursue this neurological/linguistic learning process through four primary sensory avenues: sight, sound, voice, and writing, to address all learning styles by teaching the stronger avenue/s, while remedying any weaker avenue/s, simultaneously. Attached is the Revised Orton Phonograms for correct spelling. (NKA)

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Helping Children Learn "Phonemic" and "Graphemic" Awareness.

by Myrna T. McCulloch

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Helping Children Learn "Phonemic" AND "Graphemic" Awareness

by Myrna T. McCulloch

Tom is confused and feeling quite helpless. He is trying to write a report to tell what happened, and what he learned during yesterday's science project. He is excited that he could understand *all* about the way the engine worked; his teacher really seemed to know all about cars and engines. The way he illustrated it on the blackboard made everything quite clear.

Tom knows the words he would like to use, but somehow, the *shape* and *form* of the letters in them do not come to his mind. What he learned had either come straight from the teacher's mouth, or from the blackboard drawing. Nothing was on paper; he never saw it described in words written on paper, so, he now thinks to himself, "How can they expect me to write it down?"

Tom had learned spelling through a whole word, visual memorization process only. He is not really aware how the separate sounds (phonemes) he and others use to speak are associated with specific letters (graphemes) except in a superficial and general way. He doesn't really have any experience processing the sounds or their spellings when he wants to write something. Because he doesn't have this *awareness*, he simply cannot write the words he knows and understands.

TOM IS NOT AWARE THAT HE NEEDS TO *THINK* OF THE INDIVIDUAL SOUNDS IN EACH WORD!

Tom is not *aware* that he needs to think of the individual *sounds* in each word? "What am I saying?" "What am I hearing?" "How many syllables are there?" "What is a syllable anyway?" "Are there separate sounds in each syllable?"

Can he break each word into syllables, and then into individual speech sounds (phonemes), and the letters which spell them on paper (graphemes)?" "No, Tom is thinking, even if I do, so many sounds are spelled in so many different ways, I would never get them right!" "How many different sounds are there anyway?" "And how many combinations are there to put them on paper?" "Why does English have to be so confusing?" "There must be an easier way!"

What Tom, his parents, and many teachers do not know is that there *is* a fairly simple and logical system for correct English spelling, and that it can be learned -- preferably at the primary level. This information has not been taught in colleges of education in this country, generally speaking, for nearly 60 years. I learned it, and an effective way to teach it, twenty-three years ago -- nearly by accident. It has been of enormous help to me, and to thousands of teachers, parents, and children who have discovered it through the literacy initiatives of The Riggs Institute. Perhaps it is time to put this story into perspective with the current national concern for *phonemic awareness* training.

The English alphabet is a sound/symbol system, not a pictographic one. The twenty-six letters of our alphabet, *singly and in some set combinations*, are used to write the elementary sounds of English speech -- the 42 pure *sounds* needed to *say* the entire English lexicon.** These sound/symbol relationships, and some 47 rules of orthography which ideally should be taught with them, are highly relevant because those who do not know them, cannot learn to spell except by whole-word memorization. Approximately 30% of us have no such *"visual"* capacity, and, probably, another 50% of us cannot confront these memorization tasks well. It causes no end of frustration, slows creative thought, and ensures lowered self-esteem and failure for at least 60% of would-be writers. What, if any, are the answers?

"WE NEED TO EQUIP OUR STUDENTS TO THINK, WRITE, SPELL, AND EXPRESS THEMSLEVES ORALLY AND ON PAPER...."

Well, we already know that a national cry has gone out; we must again teach phonics (research says explicit * phonics has the edge over implicit phonics), and *phonemic awareness*! To decode accurately, first one needs to be *aware* of the individual "sound bytes" in each word which will make up the words and sentences we want to read. True literacy involves much more than merely reading; we need to equip our students to think, write, spell, and to express themselves orally and on paper which helps them to clarify their own thinking. For this, ***phonemic awareness*** *must be accompanied by graphemic awareness.* Otherwise we end up with *invented* spelling which makes an incorrect engram on the young brain. In turn, invented spellings do not "map" to standard book print for decoding (reading). We must remember that ***"practice tends to make permanent."***

Here is how we teach students to listen, hear, and say the sounds accurately, to learn, read, and write the corresponding letter/s, and to pursue this neurological/linguistic learning

process through four primary sensory avenues: sight, sound, voice, and writing to address all *learning styles* by teaching to the stronger avenue/s, while remedying any weaker avenue/s, simultaneously. . .

Early primary-level instruction begins by teaching the shapes [we dictate the written form of each letter thus building acute listening skills] and the sound/s of the first 26 letters of the alphabet "explicitly" (*first in isolation, without key words or pictures). We teach two sounds (phonemes) for the consonants **c, g,** and **s**, four sounds for each for the vowels **a, o**, and **u**, and for the consonant/vowel **y;** two sounds for vowel **e**, and three sounds for the vowel **i.** *This involves teaching 31, of the 118 phoneme/grapheme relationships of English,** four per day, in about 7 days. This same instruction insures multi-sensorial "phonemic awareness" of 31of the 42 pure sounds of English speech.*

Students ***SEE*** each letter or grapheme in both book print and manuscript printing on a flash card; they ***HEAR*** their teacher ***SAY*** the sound or sounds (phoneme/s). They repeat (SAY) the sound(s) aloud and ***WRITE*** the *form* of the corresponding letters on their dotted line paper. Eight "checkpoints" are used to dictate the form and shape of each grapheme (letter/s) as the sound/s) are said, written, and learned. This is accomplished fairly quickly because this multi-sensory instruction accommodates each student's "learning style" which is neurologically based. Mastery is achieved when all students can write the graphemes successfully when only the sounds (or phonemes) for them are dictated. These 26 graphemes (letters) are then permanently recorded and illustrated on a wall chart for later reference. Remedial teachers usually start a beginning spelling/vocabulary list at this 7-day point while continuing the teaching of the rest of the 71 sound/symbol relationships. Together these constitute 118 phoneme/grapheme relationships -- quite different from the 48 phoneme/graphemes reportedly needed and depicted in the "30 Years NICHD Research" article authored by written by Bonnie Grossen.

"....MULTISENSORY INSTRUCTION ACCOMMODATES EACH STUDENT'S 'LEARNING STYLE'..."

Primary students continue to learn the eleven (11) additional phonemes which are depicted in print with twenty nine (29) two-letter graphemes which involve some additional commonly-used and primary-level spelling patterns of English **(er, ir, ur, wor, ear, sh, ee, th, ay/ai, ow/ou, aw/au, ew/eu, oy/oi, oo, ch, ng, ea, ar, ck, ed, or, ui, wh, oa).** Nineteen of these have but one sound each; four have two sounds each; five have 3 sounds each, and one has four sounds Learning them will take the first three weeks of instruction at a

rate of four per day. Students simply learn the sound/symbol (phoneme/grapheme) relationships so they can write the letter(s) from the dictated sounds.

These phoneme/grapheme units which we call "phonograms" are also recorded on wall charts which both teacher and students use. All of this "reading readiness" instruction is for immediate use in dictated spelling which we begin in the fourth week.

The spelling list starts with 150 of the most commonly used English words, the first of which is the word "me." The teacher pronounces the word, and uses it in a correct sentence for context, vocabulary, oral comprehension, to "model" age-appropriate sentences, and to teach or reinforce any desirable "across the curriculum" content. Then the question: "What is the first *sound* you *hear* when I say *me*?" Students should answer together with the sound, **"m."** If they do so, they are instructed to write the grapheme which stands for that *sound* on their practice paper (recall that they have already learned how to spell or write the correct symbol for the phoneme or sound "m" during phonogram instruction). If no one knows, the teacher simply tells them, "Here, we will use "m"; write that on your paper." Then, "What is the next *sound* you *hear* in the word *me*?" At first, teachers stress the *sound* they are looking for to make the student more *"aware"* of it. In the first dictation, they may have to repeat several times until the routine is established. Now, some children will answer with the long **e** sound. And then the question, "Which *'e'* phonogram will you use?" [You've already taught 3 different ways to spell the /e/ phoneme: /e/ /ea/ and /ee/.] Several more visually-advanced students will know that it is "eh - long e." because they have already memorized the spelling of *me*, and because they know this

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NOTHING IS BEING COPIED; THERE IS NO 'VISUAL'
STUDENTS ARE WORKING WITH LISTENING AND AUDITORY PROCESSING.

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sound and the grapheme which matches it. If some know and say it, the teacher has the class repeat the sound/s which depict long e, and says, "Now, write that on your paper next to your *m*." Nothing is being copied; there is no "visual." Students are working with listening, segmenting the correct phoneme in the word, and writing its grapheme. At this point, note that we are stressing letter *sounds* only, not letter names though the sound of the vowel "e" in this particular word also happens to be its name. It should be noted here that only the names of the vowels are ever *heard* in English speech, therefore, we do not teach the letter names until *phonemic AND graphemic awareness* is thoroughly established through learning the sound/symbol relationships only.

Now, the students dictate back to the teacher (called recoding or reading sound by sound

from the graphemes on their paper) upon her/his request, "What was the first *sound* you *heard* in "me?" What did you write? Children answer "m" and the teacher writes it on her board where the children then *see* the designated correct answer for the first time. They compare theirs to what the teacher has on the board. What was the next *sound*? Which phonogram did you use? And "e" goes next to the "m" on the board. Children now continue their comparative analysis: Does my paper *look* the same as the board? Then, they learn the orthography rule, "Vowels a, e, o, u, usually say their names at the end of a syllable." by *application* in this word, not as a rote memorization process. The teacher has been teaching his/her students the "process" of thinking, spelling, and writing independently when not being directed by a teacher -- how to direct themselves.

"THE CHILDREN HAVE NO ERASERS AT THIS POINT -- A QUALITY CONTROL FEATURE ...."

The teacher keeps close account of which of her students' papers need to be "fixed." The children have no erasers at this point -- a quality control feature for their teacher to know exactly which phonograms are not clear to them. Harder-to-teach students are placed in front of the teacher's teaching station to get immediate and ongoing notice and assistance. If children consistently miss sounds during this "phonemic/graphemic awareness" exercise, it usually means they have not learned the phonograms well enough. They should be taken back for more study and review.

The next word is "do." What is the first sound you hear? Students answer with the sound *'d'* and are instructed to write that on their paper. And the next sound? Students should answer *'oo'* (long). Then,: "And which *'oo'* will we use here?" (three different *'oo'* spellings have been taught). A mnemonic marking system is used to help children recall the correct choice and any differences between normal pronunciations and correct spellings.

"THIS ....PROCESS TEACHES THE STUDENTS HOW TO DICTATE TO THEMSELVES WHEN THEY ARE THINKING, SPELLING AND WRITING ON THEIR OWN ...."

Just a bit later, two-syllable words are begun. Now, the first question is, "How many syllables do you *hear*?" A Socratic question and answer methodology is used. "What is the first syllable?" "What is the first sound of the first syllable, etc.?" Children are learning to ask themselves: *What is the word? How does it sound? What am I saying? What am I hearing? How many syllables are there? What is the first syllable? What is the first sound of the first syllable? And the next sound? Which grapheme (letter(s) will I use? What rule*

applies? How will I recall the spelling? This process will be slow at first, but becomes quite rapid and automatic as students learn to anticipate the next question.

After dictating 30 spelling words a week for 5 weeks, the remaining 16 graphemes are taught **(ey/ei, eigh, igh, ie, kn, gn, wr, ph, dge, oe, tch, ti, si, ci, ough)**, but these have no additional or separate phonemes or sounds. They are, instead, additional and quite commonly-used spelling patterns which use some of the same phonemes previously taught. You will note that all of the 2-, 3-, and 4-letter phonograms fall into two categories:

..... 1) they change sounds completely by having been combined (e + y = long e or a), or
..... 2) the sound they depict is normally spelled with only one letter (igh/i, gn/n, wr/r).

There are a total of 71 phonograms (graphemes) with 118 phoneme/grapheme combinations. This "working set" will encode most of the speech of the average fourth grade native English speaker.

Consonant clusters or "blends" are taught during spelling dictation by calling attention to each of the individual sounds, but they are not taught as *phonograms* (str, ld, bl) in isolation. We believe this too-common practice can actually *destroy* initial phonemic awareness. Here is an example. If one teaches "s-t-r" as one collapsed sound (str) - when it is really 3 of the 42 sounds of speech - it is our experience that children lose their sense of each of the separate sounds, "s" - "t" - "r" which, in turns, inhibits the phonemic awareness necessary for accurate spelling.

"ANY ATTEMPT TO SUBSTITUTE IMPLICIT PHONICS, PRESENTED 'VISUALLY' ON WORK SHEETS, WILL NOT DO AN EFFECTIVE JOB OF TEACHING...."

We cannot overly emphasize that phonemic awareness ***is*** the first critical element of correct encoding (spelling), but knowing the correlating correct grapheme is even more important. Both are also necessary for the decoding of words because the phoneme for reading equates to correct pronunciation while the grapheme tells the reader what the word is. Neither will result in high literacy skills without an effective teaching strategy. Any attempt to substitute implicit phonics, presented "visually" on work sheets, will not do an effective job of teaching "phonemic/graphemic awareness" or "explicit" phonics. These neurological-patterning processes are best taught orally through direct, Socratic instruction. Phonics, by definition, is first *sound*, then *symbol*.

Now Tom is calm and clear minded as he sits at his desk. He's feeling quite confident and

competent. When his teacher tells the class to begin their reports, Tom recalls his excitement in learning how an engine really works, and he thinks to himself, "Let's see, how can I start to tell Dad all about it?" "What happened first?" "What is my opening sentence?" "Oh yes, I know; I want to start my report with, 'Engines are wonderful machines'." "How many syllables in engines? "What's the first syllable? And, Tom begins to write. He knows the words, he knows the syllables, he knows the sounds, and how to put these sounds on paper; and, now, they come to his mind, one after the other. He knows sentences begin with upper case letters. He knows where to start capital letters on his paper. Tom smiles happily, and begins to write his report. Dad will be surprised at how much he learned about engines, and how well he can now write his knowledge of engines on paper. He now has both the sound and symbol tools he needed; *and* he has the necessary mechanics of spelling and writing. His knowledge, his imagination and his memory can now serve him much better because he has been given the tools of written communication. Note: For more information on the phonograms and the way they are taught, see 71 Revised Orton phonograms.

Our catalog is accessible from the table on our home page.

**Linguists vary in what they have determined to be the number of phonemes in English speech (from 40 to 48). The Orton/Riggs system uses 42. In reality, there are over 250 sounds and as many dictionary key symbols that can be used to designate all the nuances in all the dialects of English throughout the world. However, the use of 42 *"pure"* sounds (phonemes) and 71 *"common"* graphemes is a sufficient *"working set"* to enable K-4 primary children to successfully encode the vast majority of all English words which are in their spoken or comprehensible vocabularies. This number builds the necessary "awareness" for early primary instruction. Students also learn to distinguish between what we "think to spell " rather than what, sometimes, may be *said* or *heard* in the rhythm of English speech, regional (dawg/dog; ider/idea) and "schwa" (butn/button; uenst/against) pronunciations considered. The Riggs Institute revised the "Orton" phonograms in 1999 to bring them into somewhat closer compliance to our authoritative dictionary, Merriam-Webster's 10th Collegiate Electronic Edition.

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71 REVISED "ORTON" PHONOGRAMS FOR CORRECT SPELLING

[brings the Orton orthographic spelling system into closer compliance with Merriam-Webster's 10th Collegiate Edition, and renders almost any text "decodable"]

GLOSSARY AS USED IN THIS METHOD OF INSTRUCTION:
Phonogram - Is a combination of phoneme and grapheme. When these phonograms are spoken, they are phonemes; when they are written, they are graphemes.
Phoneme (sound) - An elementary sound of English speech.
"Elementary" Sound - One which cannot be further divided (these are never blends such as str, bl, or nd which simply combine two or more elementary sounds).
Grapheme (letter/s) - A written symbol (letter or letters) which represents a phoneme on paper, i.e., the phoneme /oo/ is commonly written with food, do, dew, due, fruit, through, you, shoe, neutral, two, lieu

The following consonant phonograms were FORMERLY taught in most basal reading methods though they were not taught "explicitly" as compiled research *(BNR)* has recommended since 1985. In this method, two sounds for the consonants c, g and s are taught immediately and q is taught with u with which it is always used. Only the sound/s (phonemes) are dictated as the letters (graphemes) for them are written; students SEE, HEAR, SAY and WRITE these phonograms (letter/sound combinations) using multi-sensory instruction to address all "learning styles"; the key words shown here are for the teacher to determine the correct sounds only. Key words, pictures, upper case letters and letter names are **never** used to teach "explicit" phonics:

b	(bat)	**c**	(cat, cent)	**d**	(dog)	**f**	(fed)	**g**	(got, gentle)
h	(hot)	**j**	(jog)	**k**	(keg)	**l**	(lid)	**m**	(mop)
n	(no)	**p**	(put)	**qu**	(quit)	**r**	(run)	**s**	(sit, days)
t	(top)	**v**	(vase)	**w**	(wag)	**x**	(box)	**y**	(yet)	**z**	(zip)

Next are the vowels. The multiple phonemes (sounds) as shown in the key words are taught immediately and together, i.e., the letter a becomes aaah, long a, ah and aw. Generally, the sounds of all of the phonograms are taught in the order of their frequency of use in English. The third sound of i and the fourth sounds of a, o and u are needed early for both spelling and reading of simple words. Note: Vowel y takes the place of i for spelling, and is used as both a vowel and a consonant:

a (at, ate, want, talk) **e** (end, we) **i** (it, final, chic) **o** (dot,

u (up, music, blue, put) **y** (myth, my, baby)

These common combinations are not consistently taught in most methods though they are needed for correct spelling. Very often the letter, "r" is taught as "er" or "ruh" which is incorrect. Spelling errors, poor auditory discrimination/processing and impaired phonemic awareness are already common, but seriously deteriorate by mispronouncing the 42 elementary phonemes as they are taught. The key words ***are*** taught only with this group since it is the only way to designate which grapheme is meant:

er [the er of] (her) **ur** (nurse) **ir** (first) **or** (works)

ear (early) **oa** (boat) **oe** (toe)

This grouping is taught in pairs (top to bottom listing) to illustrate their uses for spelling:

ay(pay)**oy** (boy)**aw**(law)**ew** (grew,few) **ey**(they,key)

[used at the end of words]

ai(paid)**oi**(boil)**au**(fault)**eu**(neutral,feud) **ei** (veil, receive)

[not used at the end of words]

The common spellings of sounds - "sh" and "zh" - are taught before the tenth week of instruction in this method:

sh [used at the beginning of a word (**shut**), at the end of a syllable (*push*) but *not* at the beginning of any syllable after the first one (**na tion**) except for the ending "ship." (**friendship**).]

ti (nation) **si** (session,vision) **ci** (special) [all used to spell "sh" or "zh" (session, equation) at the beginning of any syllable after the first one].

The next group are 2, 3 and 4-letter spellings of sounds more commonly represented by only one letter. Children can fail to learn to read or spell because they don't know these very commonly-used alternate spelling patterns:

ck (neck) 2-letter "k" **dge** (badge) 3-letter "j"
tch (catch) 3-letter "ch" [all used after a single vowel which says t
a, e, i, o, u.]

kn (knee) 2-letter "n" [used to begin a word] **gn**(reign,gnaw)
[used to begin & end a word] **ee** (feel) e - double e says "e"

igh (high) 3-letter "i" **eigh** (eight) 4-letter "a" **wr** (write)
2-letter "r" **ph** (phone) 2-letter "f"

These phonograms are rarely taught and practiced but are essential phonetic information for accurate spelling and fluent reading. Again, each sound is illustrated here in the order of its frequency of use, using this spelling pattern, in English words.

ow (now,low) **ou** (out,four,you,country) **ch** (chin,school,chef)

ng (ring) **ea** (eat,head,break)

wh (when) **ed** (started,loved,missed) **ie** (field,pie)

ar (far) **oo** (boot,foot,floor) **ui** (fruit, guide, build)

or (for) **th** (think,this)

ough (though,through,rough,cough,thought,bough)

TO ORDER CARDS, AUDIO CD and TRAINING TAPE to teach these phonograms accurately to students of any age or virtually any ability, click on catalog on our home page (they are the third, fourth and fifth items in our catalog). You can thus learn (or teach) the *unknown* symbols (letters) for the *known* sounds children have been using in conversation for several years before they enter school. We *say* "k" "aah" "t" for "cat" -- not "see-a-tee."

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